

Toothbrush with an interchangeable brush head.

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Abstract

In the sectional toothbrush, the grip part (3) has an angled, tongue-shaped, conical connection piece (1) which fits into a conical cavity (8) of the brush head. The brush head (5) can be plugged onto the angled connection piece (1) in two opposite positions. By this means, the brush head (5) can be brought into two different angular positions relative to the grip part (3), which results in different contact planes with

the teeth surfaces to be cleaned.



Description

Toothbrush with a replaceable brush head the invention concerns a toothbrush with a replaceable brush head, which carrier-wound opposite brush head between bristles and exhibits an external wall a conical running cavity, into which the cavity adapted a connecting piece of seizing ILS is insertable. Such toothbrushes with replaceable brush heads are admit (US-HP of 1,682,325). The conical connecting piece taking up cavity is formed here by a case, which is embedded at the exterior of the brush head. The connecting piece and the cavity are trapezoidally implemented in the cross section, so that the brush head only into a certain position with seize-reach be connected can. Thus a firm position of the brush head is relative to seize-hurries given also with the use of the toothbrush. Thus all cannot be achieved surfaces of the teeth which can be cleaned in optimal way with the dental care. Task of the invention is it to train a toothbrush of the kind initially specified in such a way the fact that into simple way two different relative relative between seize-reach and the brush head can be obtained, so that the brush head can be brought into most favorable in each case the position for the cleaning. A simple replaceability of the brush head must be ensured, so that the user knows different brush heads, for example with bristles of different hardness, easily replacement. Thus also the punctual replacement of used up brush heads is to be facilitated and reduced in price. The attachment of the brush head must be safe and reliable, in particular also with consideration of very different temperatures. This task is solved according to invention by the fact that opposite connecting piece seize-hurry is bent and that the connecting piece is insertable in two opposite positions into the brush head. Thus two different angle positions of the brush head arise to seize-hurry as a result of changing the brush head, whereby during the use of the toothbrush two different angle positions of the brush head for adjustment to those surface of the teeth which can be cleaned in each case make possible will ~ as particularly favourable has itself proven to bend the connecting piece opposite seize-hurry over approximates 7°. From it resulting in the two angle positions of the brush head to seize-hurry make possible an optimal cleaning of the teeth. The connecting piece appropriately consists of metal and exhibits an extension, which into from plastic the existing seize-reach is embodied. By this metal plastic composite sheeting way of seizing ILS with the connecting piece it becomes er: calibrates that D stressed to a considerable degree range, i.e. the connection of the griffstuecks with the brush head, a particularly high firmness exhibits that thereby however the weight of the toothbrush remains relatively small altogether, because the less stressed seize-hurry of plastic consists. In order to ensure with more easily replaceability a firm seat of the brush head on the connecting piece of seizing ILS, it is intended in further training of the invention thought that in the cavity of the brush head into mutual rest recesses of the conical connection part einrastbare engage taking off brake is arranged. Further favourable arrangements of the invention thought are subject to unteranspruechen. The invention is more near described in the following with remark examples, which are represented in the design. It shows: Fig. 1 in a profile the front part of a toothbrush with taken off brush head, Fig. 2 a cut along the line ii-ii in Fig. 1, Fig. 3 a side view of seizing ILS, Fig. 4 a plan view on seize-hurry, Fig. 5 a cut along the line v-v in Fig. 2, Fig. 6 a cut along the line vi-vi in Fig. 2, Fig. 7 a modified execution form of piece of connection, which consists of a hook, Fig. 8 a side view of the connecting piece after Fig. 7, Fig. 9 a profile by the front part of another execution form of a toothbrush with replaceable brush

head, Fig. 10 a plan view on the connecting piece of the execution after Fig. 9, Fig. 11 a T -- similarly the Fig. 9 a modified execution form, Fig. 12 a plan view ngsschnitt on the connecting piece after Fig. 11 and Fig. 13 a further modified execution form of a connecting piece for the toothbrush after Fig. 11. With in the Fig. 1 to 6 represented the execution form divided toothbrush with replaceable brush heads is a zungenfoermiges connecting piece 1 consisting of metal einet einstueckig with a bent extension 2 implemented, which into from plastic an existing seize-reach to 3 is embodied. In addition the extension 2 exhibits lateral anchorage points/teeth 4. A brush head 5 existing made of plastic carries in a bristle carrier wall 6 assigned bristles 7. Between the bristle carrier wall 6 and a opposite brush head external wall 7 of the brush head 5 in its cross section the connecting piece 1 adapted cavity 8 is trained, whose length is somewhat larger than the length of the connecting piece 1. As one in particular recognizes 2 from Fig., the connecting piece 1 and the cavity 8 are conical implemented in the same way, so that the connecting piece 1 fits into the getting area 8. The angle D between the connecting piece 1 and the longitudinal direction of seizing ILS 3 amounts to preferably 7°. The Y=stenkopf 5 is plug-on, i.e. in two different position on the connecting piece 1 either in the position suggested in Fig. 1 in a position 180°, with which the boron - 7 in opposite direction sten is arranged. The brush head 5 can do thus two different in relation to positions seize-hurries 1 to take. From the brush head external wall 9 a wedge piece 10 into the cavity 8 tapering of the internal end of the cavity 8 for the opening of the cavity 8 projects itself, which is shorter than the cavity 8. The largest height of the wedge piece 10 amounts to preferably 0.3 mm. The wedge piece 10 serves as brake, which holds the connecting piece 1 reliably in the brush head 5 and a given resistance against taking the brush head 5 off effectuation. The Fig. 7 and 8 shows a modified execution/the connecting piece form 1', which is implemented here as springy hooks, whose form both wire ends the extension 2' serving for the anchorage in the griffstueck 3. For this the wire ends tossing ribs 11 exhibit, their height to the wire surface maximally 0.3 mm amount to. The two thighs of the cross bar 1' implemented as hooks are provided with a Auswoelbung 12, which is formed by a curved wire section (Fig. 8). With in Fig. 9 and 10 represented execution form, with which for same parts same reference symbols as in are used Fig. 1, is in place of wedge piece 10 engage Abziehbremse planned, which is einrastbar from into the cavity 8 rising up, from which -- head external wall 9 protruding wedge-shaped collection 13 and a rest recess exists brushes in both sides of the connecting piece 1, into which the wedge-shaped collection 13. During the execution after the Fig. 9 and 10 is formed the mutual rest recesses of the conical connecting piece 1 by a rectangular slot 14. In both positions of the brush head 5 the collection engages 13 into the slot 14, which corresponds to the collection 13 in its length and width. From this example the execution differs after Fig. 11 only by the fact that the engaging taking off brake leads als~eine kalottenfoermige collection 15 ausgearbeitet rising up into the cavity 8 in place of the wedge-shaped collection 13 is. The mutual rest recesses of the conical connecting piece 1 become here by in its length and width of the kalottenfoermigen collection 15 corresponding a rest hole 16 (Fig. 1;), formed, which also squarely or as if round drilling 17 (Fig. 13) can be implemented. The width of the conical connecting piece 1 and/or 1' and the width of the conical cavity 8 in the brush head 5 exhibit in each case a tolerance field lying between 0 and - 0.05 mm, so that a safe seat between the brush head 5 and with the connecting piece 1 the provided seize-hurry

under all arising operating conditions, very temperatures different in particular is ensured. Deviating from the represented Ausführungsbeispielen can the connecting piece 1 with seize-hurries 3 to be einstückig of metal made, for example from zinc aluminum pressure pouring, whereby the handle of seizing ILS 3 is preferably hollow implemented. The toothbrush can be implemented also as Reisezahnbürste, with the one short, which replaceable brush head 5 basic seize-hurry into a case is insertable, which for the use of the toothbrush as grasp extension on the short seize-hurry be touched down can.

Claims

Toothbrush with a replaceable brush head of patent claims: Toothbrush with a replaceable brush head (5), which between a bristle carrier wall (6) and a opposite brush head external wall (9) a conical running cavity (8) exhibits, into which the cavity (8) adapted connecting piece (1) of seizing ILS (3) it is insertable thus gekennzeichnetes that the connecting piece opposite (1) seize-hurry (3) is bent and that is insertable piece of connection of (1) in two opposite Stel lungs into the brush head (5).

2. Toothbrush according to requirement 1, by the fact characterized that the connecting piece (1) is bent opposite the grasp part (3) over approximated 70.

3. Toothbrush according to requirement 1, by the fact characterized that the connecting piece (1) with seize-hurry (3) einstückig of metal is made.

4. Toothbrush according to requirement 1, by the fact characterized that the connecting piece (1) consists of metal and exhibits an extension (2), which in from plastic the existing seize-hurry (3) is embodied.

5. Toothbrush according to requirement 4, by the fact characterized that the connecting piece (1) when springy handle is implemented.

6. Toothbrush according to requirement 5, by the fact characterized that the handle exhibits a Auswölbung (12).

7. Toothbrush nach requirement 5, by the fact characterized that the handle consists of a piece of wire, whose both wire ends tossing ribs (11) exhibit and which in seize-hurry (3) embodied extension (2) form.

8. Toothbrush according to requirement 1, by the fact characterized that in the cavity (8) of the brush head (5) by the internal end of the cavity tapering wedge piece of (10) is arranged, which is shorter than the hollow area (8).

9. Toothbrush according to requirement 1, by the fact characterized that those width of the conical connecting piece (1) and the width of the conical cavity (8) in brushing head (5) in each case between 0 and - exhibits 0.05 mm lie gendes tolerance field.

10. Toothbrush according to requirement 1, by the fact characterized that in the cavity (8) brush head of the (5) into bellerseltzge rest recesses (14,16,17) ko niches of the connecting piece (1) einrastbare engage taking off brake is arranged.

11 Toothbrush according to requirement 10, by it characterized that the engaging taking off brake leads as wedge-shaped collection (13) ausge rising up in the hollow area (8) is, and that the mutual Rastausneh mJ EN by one the collection (13) it corresponds the rectangular slot (14) in connection the piece of (1) is formed.

12. Toothbrush according to requirement 10, by the fact characterized that the engaging taking off brake as in the hollow. over (8) rising up kalottenfoermige collection (15) is implemented, and that the mutual rest recesses are preferably det by a rest hole (16), a drilling (17) in the connecting piece (1) gebil.

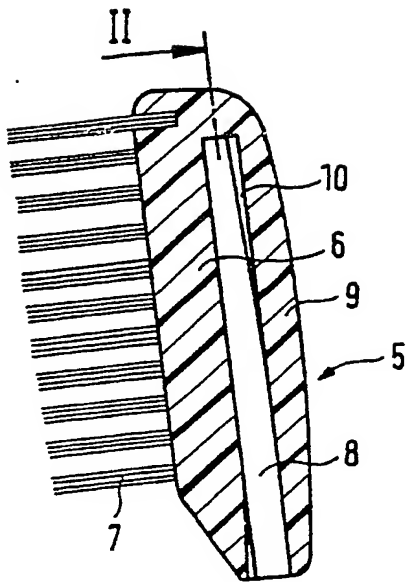


FIG. 1

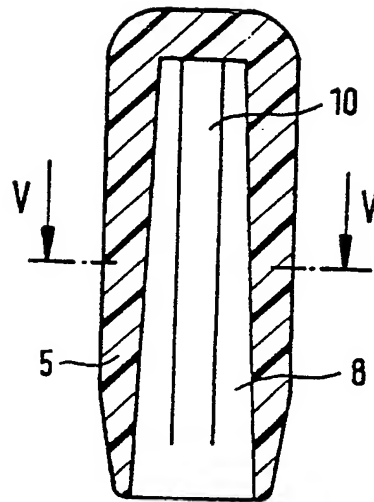
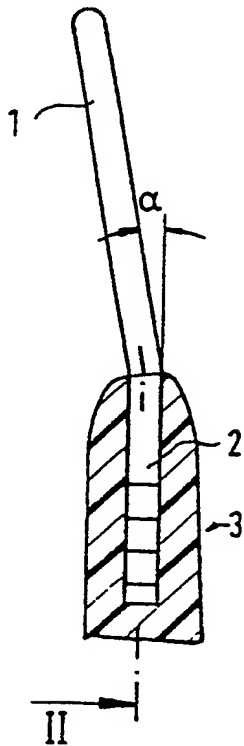


FIG. 2

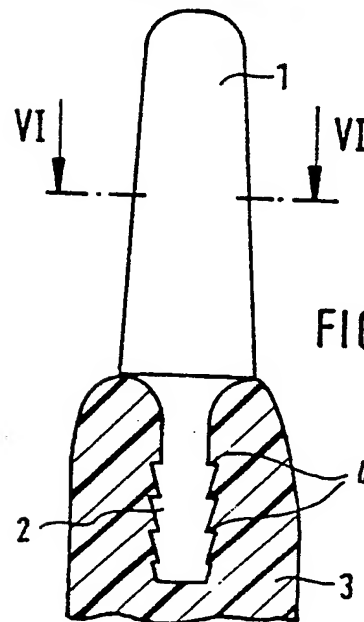


FIG.3

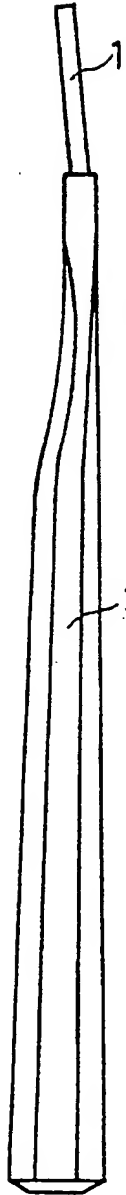


FIG.4

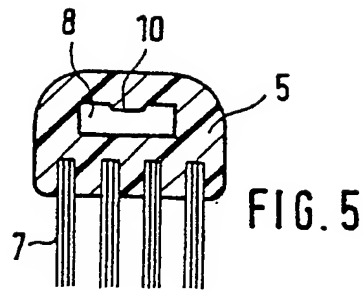
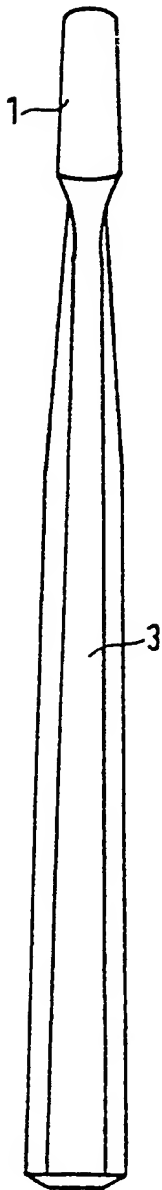


FIG.5

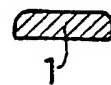


FIG.6

FIG.7

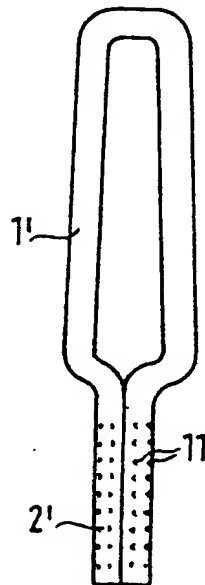


FIG.8



FIG. 9

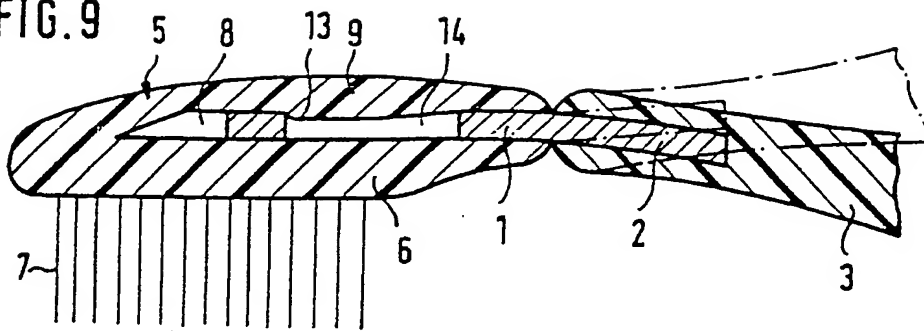


FIG. 10

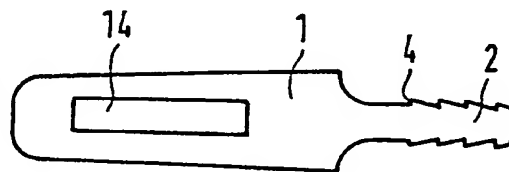


FIG. 11

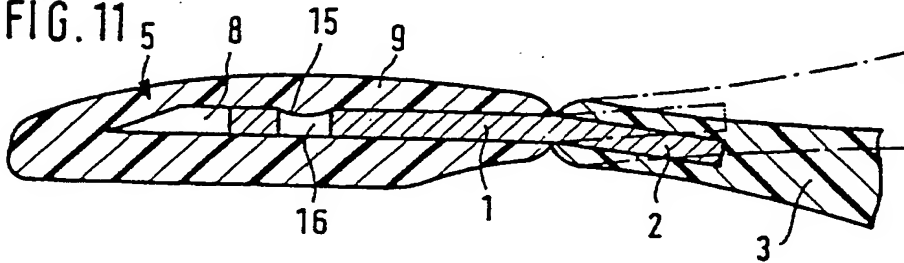


FIG. 12

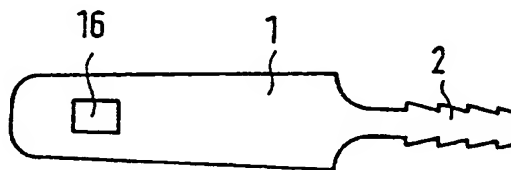
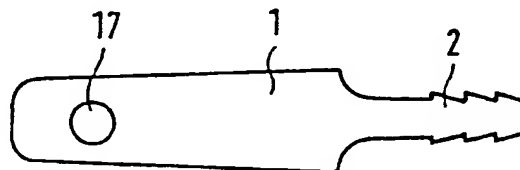


FIG. 13



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